NWX-US DEPT OF COMMERCE (US)

Using National Jobs Data to Measure Graduate Impact
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(Earlene Dowell): On behalf of the US Census Bureau and the local employment dynamics partnership in collaboration with the Council for Community and Economic Research and the Labor Market Information Office, welcome to the March LED Webinar Using National Jobs Data to Measure Graduate Impact with our presenter, Dr. Andrew Foote.

The U.S. Census Bureau continues to carefully monitor the corona virus situation and follow the guidance of federal, state, and local health authorities. We are adjusting some operations as outlined with two key principles in mind, protecting the health and safety of our staff and the public and fulfilling our statutory requirement to deliver the 2020 Census counts to the President on schedule. Please take the time to respond to the 2020 Census.

Until recently, very little information was known about earnings and employment outcomes of college graduates, especially by field of study. In 2018, Census released a new experimental data product called Post-Secondary Employment Outcomes, or PSEO. Users of this data can see how much graduates earn over time as well as where graduates are employed at and in what industry.

In this webinar, Andrew Foote discusses the creation of the product, the measurement concept, and plans for the future of PSEO moving forward. Dr. Andrew Foote is a Senior Economist for the LEHD Program in the Census

Bureau's Center for Economic Studies and is the lead researcher for the Post-Secondary Employment Outcomes data products.

Andrew received a PhD from the University of California Davis in 2015, where his research focused on how workers are affected by job loss with an emphasis on their decisions to migrate or exit the labor force, and how those effects have changed after the Great Recession. With that, I hand it over to Andrew.

Andrew Foote: All right, thank you for that introduction, Earlene. And thank you for everyone joining in this Webinar. I'm joining from my two-foot by three-foot desk in my small condo in Washington, DC. So I hope you guys are all well.

So I wanted to talk today about the Post-Secondary Employment Outcomes. And in particular, focus on the employment flows that we recently released last fall because that's the newest part of the product. So let's talk first a little bit about the jobs frame that the LEHD partnership has created.

So over the last 20 years, LEHD just celebrated its 20th birthday this year. LEHD has assembled a frame of jobs, which is a link between employers and employees. So anytime there's a positive earnings between - that someone has an unemployment insurance records but that's a job, and in creating this entire national database of jobs, LEHD was able to create a number of data products.

Now the first three of those data products that were released by LEHD were the quarterly workforce indicators, job to job flows, and the LEHD origin destination employment statistics. Those were the three main data products that were created initially.

And recently, what we've done is we've said, well, now we've created this giant national jobs frame where we have national jobs data, how can we use this data to improve and create new data products? And so, in 2018, like Earlene mentioned, we released the first estimates from the Post-Secondary Employment Outcomes data to much fanfare and much relief on our parts as well.

So what is the Post-Secondary Employment Outcomes and where does it fit within LEHD? So it's a joint pilot project between University systems and state higher education systems, as well as the U.S. Census Bureau. And these are experimental tabulation. And they provide national earnings statistics for graduates of post-secondary institutions.

So the goal of this data product is to provide students and parents better data on the return on investment to these degrees. So if you're deciding on a specific major, what schools seem to have better outcomes for that major.

As well as if you're going to a school and you're torn between a number of different majors, what appears to have the better outcomes, not just in the short term, but in the long term, because there's a lot of - the variance across majors within a school is really large. So from the 25th percentile major to the 75th percentile major is a really large amount.

So what does the PSEO provide? So we have two main tables that we released. We released an earnings outcomes table, which if you download the data, it's called the PSEOE for earnings. And that is the 25th, 50th, and 75th percentile of annual earnings for college and university graduates. And that's by institution, that's by major, that's by degree level, and that's also by graduation cohort. And then we do that for one year, five, and 10 years after graduation.

And we also, just recently and this is what we'll spend most of the rest of the time talking about, we released data on the employment by industry and region of the country. And so the actual cells are industry sector by Census division. So we'll talk about that on the next slide here.

So the real question and this is one that has been - that no one has been able to answer before, without this national jobs data, which is where are these graduates after they're graduating? Where are they employed? What industries are they working in? And then also, where geographically are they getting jobs? How many of these students are leaving the state? How many of these students are in sectors that match the training that they received with the working towards the degree that they received?

And so we can use the matched employer employee data, which we link with the transcript data, to learn these things and to produce this data, which really hasn't existed before this point. So I was very excited about releasing the employment flows data for this reason.

And so from the employer data that we have in house, we know where an employer is located. We know the state that they're located in. And we also know the industry sector. So that's a two-digit NAICS for those really big data nerds out there.

And the public tables that we that we released right now report location by Census division, and also by institutions state. So you'll see, if you download the full data table, you'll see the divisions and then there's a separate column that's those that are employed in state, which is the only nonzero in the division that the institution state is in. So for instance, the Mountain Division, Colorado is in that, you know, state one.

We also report those who are non-employed or insufficiently test the labor market. In order to be counted as employed in the Post-Secondary Employment Outcomes you need earnings above the full time equivalent of the minimum wage - the prevailing federal minimum wage at the time, and to have been employed for three quarters, at least three quarters.

So those people that earn less or are employed for a little less quarters, we categorize them as insufficiently attached. And then also those that are not employed that don't show up at all in our data. So right now, the data we use is unemployment insurance data. And so if you're only self-employed, then you will show up as non-employed in our data because we don't observe you.

So now, you know, every presentation is better with pictures because it's way more fun to look at the picture then read words, but I wanted to show some of these maps that were made for the data release that show where the graph is and where bachelor's graduates move to one year after graduation.

Like, where is their first employment location upon graduation, one year after graduation. And this is for all bachelor's recipients across fields. So this isn't - it would be interesting to do this also by field, which I'll show you how to do in the data tool in a little bit.

But as you can see here, this is the University of Texas Austin. So one year after graduation, about 80% of graduates from the University of Texas, Austin, stay in the state of Texas, which isn't surprising. It's a pretty big state and it has really large employment centers in it. And then you can see that after Texas, the most common place that individuals move is to the Pacific Division, which is California, Oregon, and Washington and then also to the east coast.

Something that's really interesting - so University of Texas, Austin, a large share of the individuals stay in the state. In the University of Colorado Boulder, it's much less. It's only 65% of BA graduates stay, or bachelor's graduates stay in the state and a large share of them go to the Pacific Division, and then the rest are sort of dispersed throughout the rest of the country.

University Wisconsin Madison -- we're choosing the flagships because they're easy for people to think about -- but the University of Wisconsin Madison is even less than University of Colorado Boulder. You can see that about 55% of people stay in the state, our BA graduates stay in the state, but a much larger share events stay in the same division.

So you can see - I don't know if you can see my cursor, but you can see here that 55% stay in Wisconsin, but an additional 15% of them stay in basically the neighboring states. So you can see that University of Wisconsin Madison is a pretty regional school and that most of their graduates are employed one year after graduation in neighboring states, pretty close by.

And then the final flagship that we look at is the University of Michigan Ann Arbor, which is a much more national school. So a Bachelor's recipients that received their degree from Michigan Ann Arbor, only 41% of them stay in the state of Michigan. Large shares of them go to the Mid-Atlantic region, large shares of them go to the Mid Atlantic, and also to the Pacific Division. So you can see that the hiring shed for University of Michigan Ann Arbor Bachelor's recipients is much broader geographically than these other schools, which are much more concentrated in a few divisions then staying in state.

Another interesting thing that you can do with this data is look at how graduates in specific fields of study, where they end up employed in terms of

the industry sector of the employer that they're working for. And so you can see here, the dark blue in this graph is business majors. The light blue is social sciences majors, so that includes a number of different majors such as sociology and economics. And then the orange is communication majors and all of the things under that umbrella.

So what you can see is business majors are much more likely to end up, not surprisingly, in the finance and insurance industry sector as well as in professional services but much less likely to end up in education and health. Social Sciences is pretty broadly employed across all of these sectors. So there's a number in retail, there's a number in finance, there's also a number of them in professional services and education and health, not so much in information.

And then what you can see, finally, for communication major's information, the information industry sector is a much larger employer than any other sector for them. So it stands out in particular, and especially compared to the other two majors in this graph, which is pretty interesting to look at.

You can also look at specific majors. So there are some majors that are pretty broad. As we saw in the previous slide here, you see that the social sciences has a pretty broad employment flows to other industry sectors. But there are some majors that match very specifically to certain industry sectors. And so one technical thing to look at is some of those people that received degrees in health, what share of them ended up employed in health.

So what you can see here is conditional on being employed. If you got a certificate in health, which is less than one year, only less than half of those individuals end up in the health industry sector. Now if you got a longer certificate or an associate degree or even bachelor's degree, a much larger

share of those individuals end up in the health sector. So those are degrees that are geared specifically towards working in the health field and are applied in that way.

Interestingly, for master's degrees, and for doctoral professional practice degrees, it's much less likely that they end up employed in the health industry. That may be because they're still doing health things but are the predominant industry sector of their employer is not actually health. And it's likely that for the professional practice, though, like, you know, dentistry for the doctoral professional practice degrees, if you own your own dentist firm that means you're self-employed.

You're not going to show up in our data. So we'll miss some people out here for doctoral professional practice, but it's really interesting to see that master's degrees in health don't end up with the individual being employed in the health sector. They may be using that expertise elsewhere in other industry sectors instead.

Now you can also see - so this is a good example of the University of Michigan Ann Arbor Engineering BA graduates, you can see that a number of them go into manufacturing, as well as professional and scientific and technical services. And then some of them go into other fields but a much smaller share going to other fields as opposed to these two major fields, which are for Michigan Ann Arbor. Obviously, their engineering majors are known to be employed in these fields but, you know, a large share, more than half of graduates in engineering end up in these two industry sectors five years after graduation. So that's really interesting to look at.

So we also have a web tool. So, you know, you really love comma separated value files, you can download the raw data. It's available. There's a schema

that we have posted on the website as well. But the best way to initially work with the data and the best way to closely work with data is to go to the PSEO Explorer.

Our data visualization team has done a great job. So you can go - you can google PSEO Explorer, or you can click on - or you can go to that URL. I already have it pulled up. And it defaults to the University of Colorado Boulder because it's the flagship in the state that is the earliest in the alphabet. This isn't a Colorado bias, although I am from Colorado.

So what you can see here, if you go - so there's two options. The one is earnings, which is what it defaults to in the data type, and then there's also a flows - right here. And we're going to look at the flows because that's what we're focusing on today.

And you can see, it defaults to a few flows, but you can actually take these away. And we'll choose engineering right now. Actually let choose business because Siebel has a pretty big school. And you can see here that one or five years after graduation, this is the count of individuals that are employed, 6523 of all the graduates are employed five years after graduation. And they're pretty widely dispersed but the largest ones are professional Science and Technical Services, as well as finance and insurance. So you can see that they light up as you scroll over them.

One nice thing that you can do, instead of doing math in your head, which I am terrible at, is you can click here. So you can see the flows of the share of the total, which is really nice. Because you can see, you know, professional services is 22% of the graduates from Business and Management. You can also, if you're more interested in other possible degree levels, you can click

here and you can say, oh, well, I'm not interested in bachelor's business majors.

I want to see what the MBAs are doing. And you can see a lot of them are in professional plans. And technical services is a larger share than those that got a BA or a bachelor's degree in business. And manufacturing and finance are obviously large employers as well. And then you can choose a specific cohort if you want.

I'm also going to look at the geographic component. So right now we just have industry sector chosen, but you can also click here on the little globe, and it says, Flows to State and Census Division. And you can see - so for individuals that get an MBA from University of Colorado Boulder, about 73% of those individuals after five years are still employed in the state of Colorado. So that's this far right here. And then the largest chair outside of Colorado is in the Pacific Division, which is the West Coast.

Now if you're interested in - okay, of those people that stayed in Colorado, what is the industry makeup of those individuals? You can click right here on Colorado, and then it'll subset so that just those employed in Colorado, what industry are they in? And you can see that about 35% of them are in professional services and 10% are in finance, insurance, and in that industry sector. You can click out of that by clicking anywhere else.

And then you can do the other direction as well. So you can say, okay, I want to know of those individuals that are employed in professional science and technical services, where are they ending up? And you can see 75% of them are employed in Colorado, and then 10% of them are in the Pacific division. So this is really helpful because you can sort of interact with all of the

possible crossings of the data at the same time just by clicking through instead of having to do the math on your own.

And then you can also do something like, okay, I'm interested in - I want to know, not just MBAs, but let's choose - so this is sorted by frequency of major right now. So you can choose the three largest master's degrees that Colorado has. And then you can say, of those three degrees, what share of those are staying in Colorado? And you can see that 68% of them are.

And you can say, okay, now that we're in Colorado, where else are, you know, where are they being employed? And you can see a large share of them are in education services, which if you scroll over, you can see most of that is actually from education, which is not super surprising. And then a large share is also in professional science and technical services.

I'll leave you with one other interesting one because I just liked this example a lot, which is looking at lawyers. Because sometimes this is helpful to see the professional lifecycle of workers. So you can see here, we're going to start with just the first cohort that we have. And you can see that - so this is lawyers who got their law degree from the University of Michigan, Ann Arbor between 2001 and 2005.

One year after graduation, about 86% of them are working in professional services. A lot of these are obviously law firms. Five years out, it's 77%. And then 10 years out, it's 50%. So most of the time, from what my friends tell me that are lawyers, you know, at about seven years, you either make partner or you don't.

And so you sort of see that they're out in the data as well where a large share - - a really large share -- are employed in professional services one and five

years out. And then after some people potentially don't make partner or decide, this isn't for me, I'm going to go into some other, like, in-house Counsel or some other employment opportunity. You see, after 10 years that there's a huge shift in terms of the industry sector makeup of this employment, which I think is really interesting to look at.

So that is most of what I wanted to talk about. We have the University of Texas System, Colorado, and Michigan Ann Arbor in Wisconsin. We're working with a number of other states as well and negotiating MOU's with them and hoping that those are speeding along there. Some of them are and most of the ones that you see here are really close.

My goal is -- I joke with people -- my goal is to win the Electoral College in terms of signing MOUs. So we're hoping to expand this rapidly. And the current coverage is only 47 institutions, but that's still 1.1 million students. If we expand in wave two, it'll take up to 25% coverage of the entire US degree receiving population, starting in 2001, which is pretty big.

And it's updated effectively annually. There's one out of every five years where there would not be an update just because of how the cohorts are constructed. And, like I said, the application is actually - for the earnings, specifically, there's code on Git so that you can host it yourself that actually queries it. And then we're working actively with the Census API teams.

So there will be a quarriable API through Census for the Post-Secondary Employment Outcomes, which I'm told that those words mean things. I've never actually used an API, but lots of people do and they seem really cool. And then we're also working on incorporating W2 and 1099 data into the PSEO for feature release. So we're in the sort of research and development phase on that.

So we're hoping that that, sort of, that gets moving so that we can measure the individuals whose earnings we have missed in the previous releases of the PSEO, which only have unemployment insurance. So that's a limitation of PSEO, and we know we've known that from the start, but we wanted to get this rolling instead of working with the IRS data right off the bat.

So with that, I think that's all. I kept these in here just in case we needed it. And then if you have questions that don't get answered, you can email me. You can also email the general PSEO feedback email, which is there, which I think will be helpful for individuals with specific questions about the app or any of the download features. Then I'm not just the one answering it and its other people that actually know more about how to interact with that than I do.

So with that, I'll open the rest of the time up for questions. I think we have about 25 minutes left for questions, which is cool. So, yeah, I never know how to end these things. So someone else say things.

Coordinator: Yes. And of course, if you would like to ask a question, just as a reminder, please press Star 1, and record your name clearly when prompted. And of course, if you'd like to withdraw your question, you could press Star 2. And we'll just allow a moment for some questions to come into queue.

(Earlene Dowell): Also, we'd like to ask that you keep the questions to the presentation.

Coordinator: All right. And just one moment. We do have questions coming in, one moment. And again as another reminder of once you, of course, do ask your question, do select the Star 1 and record your name clearly when prompted. I do apologize ahead of time if I may have mispronounced your name. So just

one moment. All right. And thank you so much for standing by. Our first question comes from, I believe, is (Rhonda More). Your line is now open.

(Rhonda More): Hi, how are you doing? (Rhonda More). Yes. My question is - I'm trying to stay close to the conference about the question - but I'm going through the hiring process of the Census data to be on board. I got this email. And I wanted to see what contact information do I need for someone to get back with me regarding the job information to help with the Census?

(Earlene Dowell): I'm sorry. If you could direct that question to the usajobs.com, where you applied, that would be helpful.

(Rhonda More): I have not gotten any response from them. That's why I'm asking.

(Earlene Dowell): I'm sorry. We're not set up for that answer. I'll look and see if I can find something for you.

(Rhonda More): Yes, if you could give me a direct contract. I didn't want to waste your time, but I surely would appreciate it.

Coordinator: All right. And our next question comes from (Mike Bartlett). Your line is now open.

(Mike Bartlett): Good afternoon. Can you guys hear me okay?

Andrew Foote: Yep.

(Mike Bartlett): Great. Thanks so much, Andrew. My name is (Mike Bartlett). I'm a Senior Policy Analyst with the National Governors Association. Appreciated the presentation and I think this is the kind of data that a lot of states and higher

end organizations are very, very interested in. So I have a lot of questions I get asked. I'm going to try and just narrow it down to a couple here. You know, you mentioned that this is information - the data sets currently based off information from about 41 institutions.

So question one is, are any kind of community colleges included in that information? And what are your kind of long-term thoughts on, you know, there's a huge focus particularly on governors on kind of industry recognized credentials and so on and so forth. So what are your kind of long-term thoughts on how you pull in the older broader world of credentialing into this type of data set?

And I guess my second question, and it's just more of a clarification, is this information is just for completers, correct? It does not include those who don't - who attend but do not complete degree or credential program?

Andrew Foote: Yeah, so I'll answer the easier question first, which is, yeah, so it's only completers right now. We have data on non-completers. The problem is we don't know if they're non completers or not. So we know they're non-completers at the institution that we can measure but we don't know if they…

(Mike Bartlett): Mm-hm.

Andrew Foote: …transferred and got jobs somewhere else.

(Mike Bartlett): Right.

Andrew Foote: I am aware that, like, I'm fully aware that their other data sources that would allow us to answer that question, but we would have to go through that

process and we haven't gotten there yet. So one thing I would say is there are community colleges, but only for one state right now.

(Mike Bartlett):   Okay.

Andrew Foote: So Colorado, because the Colorado Department of Higher Education includes all public institutions, which include community colleges. So on the screen I pulled up Arapahoe Community College because it's the first alphabetically.

But here you can see, for Arapahoe, we just report associate's degrees, but for Ames Community College - or, no, Adams State, I think has lower credentials. Yeah. So Adam State has - I'm trying to remember which one. Maybe it's community college in Aurora. So there's a number of institutions in here that have certificates as well. I, for the life of me, can't find one right now, which of course would happen, but…

(Mike Bartlett):   But if, for example…

Andrew Foote: Yeah?

(Mike Bartlett):   …one of these institutions was partnering with an employer to provide a registered apprenticeship program, that would show up in their numbers because they're sponsoring it so it would show up here?

Andrew Foote: Yeah, so it depends on how the Department of Education or how the institution classifies it.

(Mike Bartlett):   Yeah?

Andrew Foote: Right now we don't deal with - we don't directly measure the apprenticeship programs. There is an ongoing project at Census related to that within the Center for Economic Studies. And we talk with them frequently because the methodology that we use has been implemented for a number of different types of these products within Census.

And so there's definitely a part or an ongoing project that looks at these employer provided credentials or apprenticeship programs, but that's outside of the scope for PSEO. But it's definitely something that's happening in Census. It's just not happening in this specific data product.

(Mike Bartlett):   Great, thanks so much.

Coordinator: All right. And our next question comes from (Jim). Your line is now open.

(Jim):   Hey. Thank you very much for your time and a fabulous presentation, Andrew. Are there any conversations underway with the State of Kentucky at the moment that may have been updated since your presentation?

Andrew Foote: No, we haven't - the way a tool works for, like, expanding is sort of who talks to us. So we haven't actually ever sought out any partnerships. It just sort of happened, but specifically when the University of Texas - when we rolled out the University of Texas data, they made a huge public push, which sort of put us on people's radar. So we haven't heard anything from Kentucky. We would certainly be interested in any state that wants to partner with us. So, you know, you can you can follow up, but we haven't had any discussions with Kentucky specifically.

(Jim):   Hey, thanks, Andrew.

Andrew Foote: Yep.

Coordinator: All right. And our next question comes from (Kathy Hale). Your line is now open.

(Kathy Hale):   Good afternoon. I am from the State Library of Pennsylvania. We're under the Pennsylvania Department of Education. So if the Department of Education pushed to you to try and include institutions from our state, would that be a right person to contact you?

Andrew Foote: So I think - right, like PASSHE? Is that the…

(Kathy Hale):   Well, there's an overall Department of Education that would include the PASSHE schools as well as other institutions.

Andrew Foote: Yeah, I think - I mean, we'd certainly be interested.   We've talked to PASSHE and we've talked - we actually just executed an MOU with Penn State, which I forgot to update on the slide since that happened last week. And last week was crazy. And event this week.

(Kathy Hale):   Sure.

Andrew Foote: But, yeah, we've worked with parts of Pennsylvania but, you know, certainly to the extent that we can knock out whole states at a time, that's helpful for us.

(Kathy Hale):   Okay, the other question I have is you shown us a number of different waves, graphs, and things like that. Can you go over again, just for a moment, how to change the graph?

Andrew Foote: Yeah, yeah, definitely. So on the screen there's, at the very top, there's the choice between earnings and flows. So you have to choose which of the two tables you're going to look at.

(Kathy Hale):   Mm-hm.

Andrew Foote: And then the next decision that you would make is which state you want to look at, which is the institutions in that state. So if you're just interested in institutions in Colorado, you can choose Colorado, or any of the other states. For Michigan and Wisconsin, there's only one institution in them, it's the flagships.

So we can go to - here, I'll just go to Texas. And so if we go to Texas, you get all of the University of Texas schools. So you can choose which of the schools to you want to have, that you want to look at. And then you can choose which degree level you're interested in. So it'll only populate the degree levels that are available at that institution.

And then, the default for graduation cohort is all cohorts, but if you click on the drop down, you're only interested in individuals that graduated, for instance, in the Great Depression, which you know, might be morbidly relevant right now. You can click on that graduation cohort and just see the data for that cohort.

And then for the destination, there's two different possible destinations. There's the industry sector and there's the state. So it flows to the geographic area. And you can choose - these are toggles. So you can choose one or the other. So you can choose both of them at the same time. Or you can take the industry sector away.

And then you can also choose which year after graduation you're interested in. So one, five, or 10 years. It'll gray out if it's not available. And then you can also, for the flows, choose whether you want it in counts or whether you want it as percent. So you don't have to do math on the fly.

Then you can choose a bunch of them down here. So you can see, you know, okay, I'm not interested in social sciences, but I am interested in biology. Maybe I'll click on that. And then if you're having trouble, the default sort of these is by the size of the program. So the most common ones will be at the top, but you can also sort it alphabetically. So if you're interested in - if you're looking for a specific major, sometimes it's hard to find them. It's sorted by popularity, so you can sort it alphabetically and find it that way.

(Kathy Hale):   Okay, thank you.

Andrew Foote: Yeah, for sure.

Coordinator: All right. And our next question comes from (Theresa Ford). Your line is now open.

(Theresa Ford):   Hi, thank you. I was wondering, does your tool include private nonprofit colleges or only public universities and colleges? And when you expand to Ohio, will it include regional campuses of public universities separate from the main campus? Thank you.

Andrew Foote: Yeah, so currently, we don't have any private institutions in the data. That's mostly because the way we've tried to expand it is by working with state higher education authorities, which don't generally have the private data. So it's costly for us to negotiate MOUs that takes longer than it should. So that's the main reason why there's not private institutions in the data.

For any state where we're expanding, as long as the campuses report as separate OPEID, which is the Office of Post-Secondary Education Identification that the Department of Education use, that's the actual institution that we report, the level we report at.

(Theresa Ford): (Unintelligible)…

Andrew Foote: So as long as - say that again?

(Theresa Ford): I was just wondering. So if they report their data separately for the ITEB System, is that the equivalent of what your…

Andrew Foote: It should be. Yeah, it should be the same.

(Theresa Ford): Okay.

Andrew Foote: I haven't checked for, like, for Ohio's file, but I would be surprised if it was.

(Theresa Ford): Okay, thank you.

Andrew Foote: Yeah. Any other questions?

Coordinator: All right. And our next question comes from (Scott Walker). Your line is now open.

(Scott Walker): Hi, there. I wanted to ask if there is any data on students that go work internationally. That would be cool.

Andrew Foote: No, there's not. Yeah, there isn't. And even if we expand to the W2 and 1099 data, we wouldn't be able to capture those individually.

(Scott Walker):   But you have the, from the institutions, you have the total number of students, presumably? But then what is shown is just who ends up in a particular industry and known geographic location, but would there be a way to say elsewhere or unknown?

Andrew Foote: No. Here I'll show you the thing we do report. So if you click out of both of the destination flows, we report employed, which is we observed you in the data and you have sufficient earnings. And then there's no or very low earnings observed, so the marginally attached or non-employed individuals.

(Scott Walker):   Okay.

Andrew Foote: And some of those individuals are going internationally, but we don't know what share. Even if we have all the self-employment data. We're not sure if they're working internationally or just unemployed or like not employed because of other reasons. It would be hard for us to make inference on that count.

(Scott Walker):   Okay.

Andrew Foote: I wish. That would be amazing (unintelligible).

(Scott Walker):   That could just give you an idea of the share of people that you don't know about at least. So the left side is the full universe of people that graduated in that field from that institution. And then the right side is where they ended up.

Andrew Foote: Yeah, yeah. And like specifically those people that had ended up with sufficient earnings and unemployment insurance data and then those who don't…

(Scott Walker):   Okay.

Andrew Foote: …which, you know, self-employment is part of that, but other things that are not covered by unemployment insurance are also in that category.

(Scott Walker):   Okay. Thank you.

Andrew Foote: Yep.

Coordinator: All right. And our next question comes from (Marshall Standby). Your line is now open.

(Marshall Standby):   Yes. Hi. Thank you. Can you speak a little bit more to the cohort structure of the data? You've sort of toggle between a couple of different cohorts, but are those uniform across institution? And how far back do they go? I'm curious if it's possible to compare outcomes, like, for earnings holding constant institution, major degree level, that sort of thing, across cohorts.

Andrew Foote: Yeah, so the cohorts are fixed. They're the same for everyone that comes into the data. So there's slightly different between bachelor's degrees and everyone else. So you'll see here for bachelor's degrees, the cohorts are three years long. So 2001 to 2003, four to six, et cetera. For every other degree level, if they're five years long, that was mostly due to cell sizes, like, we needed enough people in cells to actually have accurate data after we protect it. But

those are uniform across institutions and across any new institutions we might get in the future as well. Does that answer your question, (Marshall)?

(Marshall Standby): Yes, and it looked like from when you clicked on the cohorts and went back to 2001 is the earliest possible cohort. Is that right?

Andrew Foote: Oh, yeah, that's the part I forgot. Yeah, for us, the world starts in 2001 for PSEO.

(Marshall Standby): Okay.

Andrew Foote: Mostly because we have much better coverage of the unemployment insurance data starting in about 2000.

(Marshall Standby): Right. Yes, I've used QWI before. Just one last question. This business of adding 1099 and W2 employment and wages, is that an LEHD wide effort to augment the unemployment insurance data?

Andrew Foote: Yeah, I would say PSEO is sort of the R&D portion of that right now.

(Marshall Standby): Thank you.

Andrew Foote: Yeah.

Coordinator: All right. And our next question comes from (Mary Center). Your line is now open.

(Mary Center): Yes, thank you. And I have used this data a bit on the earning side of looking at sociology majors -- I am a sociologist -- looking at sociology majors compared to other social science majors, economics, political science, as well

as humanities majors. But I know when you look at the flow data, the category the major category is social science, which is a fairly broad category, partly because it includes economists, who tend to earn a lot more than sociologists and political scientists.

So are there any plans with the flow data to disaggregate by individual majors? Because over time, you'll eventually have a large enough case space where these confidentiality concerns will probably be less pressing.

Andrew Foote: Yeah, so unfortunately, there's not a plan to do that. And the reason is the matrix of destination flows is very sparse to begin with. Even if we add more data, we're still protecting it at the institution, degree level degree field, graduation cohort level.

(Mary Center): Yes.

Andrew Foote: And so there's just - the matrix is really sparse. So it's not - if we go down to, like, a four-digit zip code, it would just be really noisy. It's not clear that, like, we would actually be getting useful data after we protected it because the cells themselves would be so small. Which isn't, I mean, like, you know, unfortunately, precludes interesting questions but…

(Mary Center): Yeah, I don't - can you still hear me? I don't know if I'm still on.

Andrew Foote: Yeah, I can hear you.

(Mary Center): Yeah, I mean, one thing would be just to collapse, you know, collapse categories. So you could have, you know, with the flow data, if you are at the level of majors, you could just whatever the largest category is, the largest two

categories versus the other, or the same with geographic areas. Wouldn't that get around some of the low-end problems?

Andrew Foote: So not in the way that we protect the data right now. Which is like a much more technical talk.

(Mary Center):   Okay.

Andrew Foote: But I think - yeah, I understand what you're saying. And that makes sense in a number of different ways to protect confidentiality. It doesn't make sense - it can't apply in the way we protect the data.

(Mary Center):   Yeah. Okay. Very good. But we've found the data just very valuable. Again, we've looked only at earnings, but it's really - it's fun. The Explorer is fun. And we found some really interesting, interesting things to report. So thanks very much.

Andrew Foote: Well, I'll tell the Vis Team. They did a great job. So (unintelligible).

(Mary Center):   Yeah, no, I mean, the data is interesting, too. Visualize or not, I'm a numbers person. I like looking at the numbers too.

Coordinator: Alright, and our next question comes from (Bob). Your line is now open.

(Bob):   Yeah, hi there. I noticed under the graduation cohort, the latest year, most recent year is 2015. Is there any timeline to get more recent graduates at this point, or is it going to be remaining that year for the final year?

Andrew Foote: Yes, we're going to get more data. So if the next cohort for Bachelor's would be 2016 to 2018. And we haven't even finished processing the 2019 earnings

data in LEHD. So we can't begin to produce the new set of PSEO for that next cohort because we need the full cohort to have their full year of earnings before we do anything. So there are plans to, you know, push it forward, but that just hasn't happened because we need the whole cohort to have had a chance to have their first-year earnings.

(Bob):   Okay, thank you.

Coordinator: Alright, and our next question comes from (Jan Kinney). Your line is now open.

(Jan Kinney):   Hi, this is (Jan) from Connecticut. Great work. I'm excited about it. Three quick questions, do you have plans to disaggregate the data in any way by race, ethnicity, gender? Second question is how do you handle individuals who had multiple degrees?

                              And the third question is, I understand when you're dealing with MOUs, you're still working in MOUs for sort of a second cohort for states or institutions that might be kind of in a later cohort, what is the length of time that they should expect it would take to get new MOUs in place? And are those MOUs sort of set as is and the states adopt them as they are or is there any flexibility? Thank you so very much.

Andrew Foote: Yeah, can you can you say the second question? I was taking notes, and then I missed the second one.

(Jan Kinney):   Sure. I think the second question was how do you handle students who have subsequent degrees, multiple credentials?

Andrew Foote: Oh, yeah. Yeah. So the observation for us is an individual by degree. So if they got a double major, they're actually in here twice. Because they got two separate degrees in different six-digit zip codes.

(Jan Kinney):   Okay.

Andrew Foote: And then if they - additionally if they get their master's degree later, we keep them in the bachelor's data and also then in the Masters data.

(Jan Kinney):   Okay.

Andrew Foote: So we wrestled with this a lot. We didn't want to penalize bachelor's degree granting institutions for having successful students that eventually get master's degrees by taking them out of the bachelor's calculations. We didn't think - that didn't make sense to us.

And, you know, if they go straight into their graduate degree, and they're not actually earning - they're not in the earnings data because they're a graduate student. They just will show up as unconnected or, like, non-employed in the data so.

(Jan Kinney):   Okay. And plans to segregate?

Andrew Foote: Oh, yeah. There may be - that's something we're thinking about when we release with all of the self-implant just because we are able to get potentially a new privacy laws budget to think about how to use. So that's something we're considering for the future, but sort of like in the more distant future.

And then your final question was about, like, MLAs. We're hoping that the next round after wave two is faster because there are a lot of things that

happened. One was that there was a government shutdown. The second one is that everything got - there's a reorganization inside of Census, which affected, like, how the flow of where those legal agreements were going, which sort of slowed down the process as we learned it. And then also, we're just handling a lot. So hopefully they go faster. We also have a standardized template this time, which is a lot better than what we were working with originally.

(Jan Kinney): So say you kind take MLAs as it comes in, there won't really be any tweaking or anything like that?

Andrew Foote: It's possible for tweaking but it's, you know, the template itself has been blessed by the powers that be at Census. So it'll make even the revisions faster.

(Jan Kinney): That make sense. Thank you very much.

Andrew Foote: Yeah, thanks, (Jan).

Coordinator: All right. And our next question comes from (Greg Chetman). Your line is now open.

(Greg Chetman): Thank you. Andrew, this is powerful data. Thank you very much. The question I have is, I didn't see the list of institutions yet. So can you tell me what, if any, you have from the state of Florida? What's involved with getting an MOU between institutions? And then just a clarification, I think you said the employability threshold is full time minimum wage - federal minimum wage level, is that correct?

Andrew Foote: Yeah, so I'll answer the second one first. I'm going to go over to the website here to show you. So, to be counted in the earnings data and then also to have employment as we count in these flows data, you have to have at least three quarters of positive earnings and have earned the full time equivalent of the prevailing minimum wage. So we, you know, calculate what that is based on where in the year have changed.

And all of that sort of - those sorts of things are spelled out here on the actual PSEO website. And then also in the technical documentation. So if you really want - if you're home and you want some reading, the PSEO technical documentation, I'll spell that out. And then also the technical appendix will talk more about the protection systems for those of you that also need help sleeping.

And then in terms of working with institutions, I know we talked to the Florida Board of Governors. I don't know off the top of my head where that is, but it's certainly something that we're working on right now in terms of Florida.

(Greg Chetman):   What's involved in an MOU?

Andrew Foote: So it's, like, what does the institution sends to us?

(Greg Chetman):   Well, I guess, what's the cost to the institution or to the state?

Andrew Foote: Oh. Yeah, okay, that's a good question. So there is no cost currently. This is sort of, you know, you give us data. And we can produce this PSEO. There is some funding that is made available, specifically for PSEO, as part of the research and methodology within Census. So it's not something that we

charge for from institutions. It's something that we produce as a public good for the country, I guess.

(Greg Chetman): I can ask you one last quick question. What in your data has surprised you?

Andrew Foote: Hmm. What in my date - you know, I think there has been a lot of chatter about how certain, like, liberal arts and arts majors fair using the data and that's not actually borne out in the data. So even, like, you know, I'm trying to select one that's not going to totally put people on blast, but even, like, some of the arts, especially at University of Texas System, perform pretty well and then especially after five years.

So I think one of the things that surprised me the most is even if individuals start at a certain earnings level, so there's a lot of majors that have, you know, around $30,000 is the starting earnings one year after graduation, the dispersion in outcomes at 10 years within those majors that had the same one year earnings is pretty surprising.

So there are some majors like biology where there's very low initial earnings, but the growth is actually pretty high. Whereas there's some majors where there's low earnings but they stay at similar levels, they don't grow as much. So I think that's interesting because it tells you that we need to know more about long run outcomes rather than just initial wages in the labor force.

(Greg Chetman): Thanks very much.

Coordinator: All right. And our next question comes from (Cedric). Either (Cedric) or (Daedric). I do apologize. Your line is now open.

(Cedric):   Thank you. Hi, it's (Cedric). Andrew, great presentation. A couple of quick questions. One is, are you having any conversations with institutions or with a governing body for either Missouri or Kansas? And the second question is we've been looking at labor market trends across key industry sectors here in Kansas City region for the last four years or so, across those sectors that really drive GDP in our region.

A large number of those people that we are looking at, however, our adult learners who are currently employed, maybe even working in given sector, that are going back to school to increase their earning potential. What does this data tell us about that particular population?

Andrew Foote: Yeah, I think - so your first question was about Missouri and Kansas. We have talked in Missouri, I think that's in wave three, because we have quite the enthusiasm on both parts that need it for Missouri. For Kansas, I don't think we've had any contact with them, but I could be incorrect.

And then I think that specifically - so at least the narrative as I understand it from some of my research is that most of the individuals that are going back to get degrees are getting, like, shorter certificates. And so to the extent that we have data on the earnings outcomes for those certificate programs, I think that tells more of the story.

So, you know, if you see, you know, I'm going to choose one that I know has some certificates here, like I think Pueblos Community College - (unintelligible). I don't understand where this (unintelligible). So there's a number of institutions that have these certificate programs. And I think that helps us understand what those, like, what those contributions are. Because most of those individuals that are going back are not getting full degrees as we

understand them. And so, yeah, I think a lot of the actions on the short-term certificate programs, and I think this helps a lot to address that.

(Cedric): Good. Great, thank you.

Coordinator: All right. And our next question comes from (Ann) Schneider. Your line is now open.

Jean Schneider: Hi, this is Jean Schneider from the University of Hawaii. This is such a great tool. Thank you so much. My question is, are there plans to expand to a bigger digit NAICS code? So codes like professional, scientific, technical, they're very broad and so I'm not sure how useful those are. And even better would be SOC codes. Like, we would like to know the jobs, not just the industry that students end up in.

And let's see, my other question is, you know, sorry, I joined a little late. I did hear you say that you're working on adding self-employed to this data. And I was wondering, like, other unemployment insurance data, are federal agencies data not in here? And my last question is, has Hawaii been in touch with you to join this project? Thank you.

Andrew Foote: Yeah. So, Hawaii, we have talked to Hawaii a little bit. In terms of the SOC codes, the unemployment insurance data does not have any SOC codes attached to it. There's maybe one or two states that have that, but they don't share it with us. So we have no way of observing occupation, which is unfortunate, but that's sort of - it's always something that both other people and us would really love to see because it would be really helpful, but we just don't have occupation data. So it's unfortunate, but it's sort of out of scope for the data that we have.

And then similar to the question about going to more detailed degree field on the flows, going to more detailed makes codes is really not feasible in the way we protect the data and also just because that matrix is super sparse. So I think it would be really interesting to go lower down, but I don't think that we would gain much given the noise that we would have to add to the data to protect it, which is unfortunate. But that's just sort of how it is right now.

Jean Schneider: Thank you.

Andrew Foote: Yeah, sure.

Coordinator: All right. And our next question comes from (May Way). Your line is now open.

(May Way): Thank you. Can you please refresh me again, what are the data source, you know, you used for this pilot project?

Andrew Foote: What data sets are used for it?

(May Way): Yeah, where did you get…

Andrew Foote: Yeah. Yeah, so the earnings data comes from unemployment insurance earnings records data that are provided by the state. So we have legal agreements with almost every state in the country, and they provide earnings information to us.

(May Way): Is that part of the LEHD data summation?

Andrew Foote: Yeah, that's correct.

(May Way):   So does all the states understand they are aware that which - what your record has been utilized for this pilot project?

Andrew Foote: Yep. They all understand it. We have a regular partner meeting and we've talked about it a lot for about three years. So we've tried to make it as visible as possible.

(May Way):   What is a partner meeting? I'm sorry, I missed that. You say you have the partners meeting? Is that every state participate in a partnership meeting?

Andrew Foote: Yeah, so we have a partnership meeting…

(May Way):   Mm-hm.

Andrew Foote: I don't know when it is next, where we try to bring in all the people that we're working with and to discuss both future work that we're doing, as well as new data products, such as the PSEO.

(May Way):   So can we participate in the partnership meeting? Because we are not aware of what North Carolina - we are not aware of which our data has been utilized for this pilot project. So I get because we missed the partnership meeting or something like that?

(Earlene Dowell): I think what you need to do is reach out to your LMI Director…

(May Way):   Mm-hm?

(Earlene Dowell): …and see if you can communicate with him regarding the partnership.

(May Way):   Oh, I am the LMI Director for North Carolina.

(Earlene Dowell): Oh, okay.

(May Way): So, yeah, we haven't received any invitation for the partnership meeting. So I'm very curious to see how can we participate and to better inform about how our data has been utilized for the project.

(Earlene Dowell): We'll put somebody in touch with you.

Andrew Foote: Yeah, reach out to Keith Bailey. He's the contact for the States. And you can shoot me an email as well. I can forward it on to (Keith).

(May Way): Okay. Well, thank you for providing the information.

Coordinator: All right. And our next question comes from (Patrice Williams). Your line is now open.

(Patrice Williams): Hi, thank you. Actually, I just had a question about if the state of Illinois has a partnership with you guys? And how can other institutions become a part of the project?

Andrew Foote: So Illinois does not currently - we've been in discussions with Illinois. So there's potentially something on the horizon there. So that's sort of - yeah, that's as much as I can describe off the top of my head without my like, tracker GitHub page.

(Patrice Williams): Okay, thank you.

Andrew Foote: Yeah. Thank you.

Coordinator: All right. And our next question comes from (Ailene Donald). Your line is
                   now open.

(Ailene Donald):   Hi, I was wondering - I'm also in the state of Pennsylvania. So for the
                   institutions that you'd have on board already, what does the timeline look like
                   to get those guys up and running? You mentioned that you've had discussions
                   with PASSHE, so I'm curious to find out how long it could possibly take until
                   Pennsylvania data could be available, or if there's anything that an EDO could
                   do to help expedite that process.

Andrew Foote: Can you ask the second half of that again? Sorry, I missed - I somehow
                   missed it.

(Ailene Donald):   No problem. Is there anything that an economic development organization
                   can do to help expedite the process of getting more institutional data?

Andrew Foote: I think, well, specifically for Pennsylvania, we've actually, you know, we've
                   gone pretty far in talks with them. So it's not - I don't know if it's expediting
                   but maybe, you know, discussing and highlighting the value of the data is
                   always good, not just for one state but for all states. So we've seen a payoff.

(Ailene Donald):   And so how long - you said you've had discussions with PASSHE. What sort
                   of timeline does it look like to get that data in the tool and it's available for
                   others to use?

Andrew Foote: Yeah. So once an MOU is executed with them, it only takes about two
                   months from front to back. Well, about three months because it takes about
                   six weeks for the data to get loaded into Census and, like, run through all of
                   the processes that have to happen at Census. And then once it hits my shores,

like, where I get to start working with it, it's really fast to run through the process.

It used to be averagely really fast, and then we actually like productionized the code thanks to someone, Stephen Tibbits. And now it's super-fast. It's like an hour once we actually have the data in the form, we need it to run out and then have the output. And then we have to - before we release initial estimates, we always embargo it to the partner and to the state LMI shop. So there's an additional lag there, but that's the only, like, real institutional lag.

(Ailene Donald): Great. Thank you.

Coordinator: All right. And our next question comes from (Sue Heimer). Your line is now open.

(Sue Heimer): Hello, can you hear me?

Andrew Foote: Mm-hm.

(Sue Heimer): Yes, so I was wondering, you know, considering the student loan, you know, crisis going on in the country, do you have any data on tuition or student loan, you know, for the purpose of a cost and benefit analysis? I think the type of data, in addition to earning data will, you know, help future students to make informed choices and decisions about choosing schools and study?

Andrew Foote: Yeah, so we don't have any of that data. We don't publish any of that data. I would point you actually - so the University of Texas System has a tool called CTT. And they actually integrate our data with their loan data. So they know the average or the median loan amount for a graduate in a specific field. And

so they attach that to our data and display it next to one another, which I think is pretty interesting and a good use of data.

So we've encouraged partners, look, you can take our data, you know, as long as you download the CSV file and cite us, like, we don't really care. And then they have the ability to actually do that analysis in house without ever sending it to us. So they can attach that which I, you know, we encouraged because I think that that's a useful thing that states can do that is something that isn't really necessary for us to do.

(Sue Heimer):   Okay, so El Paso does not have any plan to include that data in your system? I think that will help the, you know, demystifying the educational market in the US.

Andrew Foote: Yeah, I think it would be interesting information to have. There are a number of hurdles, some of them are capacity related and some of them are legal.

(Sue Heimer):   I see. Okay, thank you. This is a very, you know, helpful information. I surely appreciated.

Andrew Foote: Oh, thanks.

Coordinator: All right. And our next question comes from (Alex). Your line is now open.

(Alex):   Hello. What is the typical process for the individual and institution to join the project? Thank you.

Coordinator: I'm sorry, Alex, if you don't mind, please speak directly in the mic. We didn't catch that. I'm sorry.

(Alex):   What would be the typical process for individual institution to join the
                  project? What they should do? What step would it take?

Andrew Foote: Yeah. So generally, if an individual institution reaches out to us, we asked if
                  there's a governing body above them. So, like, you know, in an example
                  where we've already executed MOUs, say if CU Boulder had initially reached
                  out to us, we would have said, okay, CU Boulder, we know that the higher
                  education is actually, you know, doesn't hold your data, but everybody else's
                  in Colorado.

                  If you want, you can encourage them to reach out to us. And so we generally
                  encourage individual institutions to reach out to the Education Authority, like
                  in the State that's above them, because we try to get as many people in the
                  door through one legal agreement is possible. For us it makes a lot more
                  sense. The reason Michigan and Wisconsin are in is through a separate
                  project at Census. So it was more innocuous then the main process that we
                  bring institutions in.

(Alex):   Okay, thank you.

Coordinator: All right. And our next question comes from (Paul). Your line is now open.

(Paul):   Andrew, I just was wondering if you had reach out University of Puerto Rico
                  data and to include them? Are you planning to include them in the future?

Andrew Foote: So we have not reached out. So we actually haven't reached out to anyone.
                  They just sort of reached out to us. So to the extent that, you know, we
                  haven't heard from University of Puerto Rico, so we haven't been talking to
                  them for that reason, not for, like, lack of interest, but just we haven't heard
                  from them.

(Paul):   Okay, thanks.

Andrew Foote: Mm-hm.

Coordinator: All right. And as of now, there are no further questions in the queue.

(Earlene Dowell): Excellent. So I just wanted to thank everyone for joining us this afternoon.

                  Also, thank you to Andrew for such a wonderful presentation. Join us next

                  month on April 15 at 1:30 pm eastern standard time when Colby Brown

                  presents Combining Loads, ACS, and OpenStreetMap Data to Develop

                  Highways. Again, on behalf of the US Census Bureau, please be safe.

                  Thanks.

                            END